

REMARKS

Claims 1, 3-13, and 15 are now pending in the application. Claims 1, 3-5, 11-13, and 15 are now amended. Claims 2 and 14 are now cancelled. The claim amendments are fully supported by the application as filed and do not present new subject matter. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 1-3, 5, and 11-15 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Lo et al. (U.S. Pat. No. 6,507,098). This rejection is respectfully traversed.

Amended independent Claims 1 and 12 each recite, in part and with reference to Figure 1 for exemplary purposes only as the invention includes numerous embodiments, a third semiconductor package PK13 that is independent of a second semiconductor package PK12. Both the second and the third semiconductor packages are supported on a first semiconductor package PK11 so that an end of each of the respective packages is arranged directly above a semiconductor chip 13. The second and third packages have first and second projections 28/38 respectively that support the ends of the respective packages above the semiconductor chip.

Amended independent Claim 11 recites, in part and with reference to Figure 1 for exemplary purposes only as the invention includes numerous embodiments, a third package PK13 that is independent from a second package PK12. Both the second and the third packages are supported on a first package PK11 so that an end of each of the

respective packages is arranged directly above an electronic component 13. The second and third packages each have a first and second projection 28/38 respectively that supports the ends of the respective packages above the electronic component.

Amended independent Claim 13 recites, in part and with reference to Figure 1 for exemplary purposes only as the invention includes numerous embodiments, mounting a third semiconductor package PK13 including a plurality of third semiconductor chips 33 on or above a third carrier substrate 31. The third semiconductor package is independent from a second semiconductor package PK12. A projection 28/38 is formed on each of the second and third semiconductor packages. The projections are arranged on a first semiconductor chip 13.

Independent Claim 15 recites, in part and with reference to Figure 1 for exemplary purposes only as the invention includes numerous embodiments, mounting a third package PK13 of third electronic components 33 on or above a third semiconductor substrate 31. The third package is independent of a second package PK12. A projection 28/38 is formed on each of second and third carrier substrates. The projections are each arranged on a first electronic component.

The Lo et al. reference appears to disclose, with reference to Figure 2, a chip package structure that includes a first chip 26 mounted to a circuit board 100 via a heat sink 50. A substrate 10 is mounted to the first chip 26. Mounted to the substrate 10 are second chips 40 and 42. The substrate 10 is unitary with an opening 24 in the middle (column 3, lines 32-34). The second chips 40 and 42 are not bonded to different or independent substrates, as it might appear in the cross sectional view of Figure 2. Bonding pads 32 and wire 38 connect the substrate 10 to the first chip 26. The bonding

pads 32 are not bonded between the substrate 10 and the first chip 26. Further, the pads 32 only provide an electrical connection and do not support the substrate 10 on the first chip 26.

The Lo et al. reference fails to disclose or suggest a third semiconductor package independent from a second semiconductor package, the second and third semiconductor packages supported on a first semiconductor package so that an end of each of the first and second semiconductor packages is arranged directly above a first semiconductor chip, as set forth in amended Claims 1 and 12. Further, the Lo et al. reference fails to disclose or suggest projections that support the ends of the independent packages above the first semiconductor chip, as set forth in Claims 1 and 12.

The Lo et al. reference fails to disclose or suggest, a third package that is independent from a second package. The second and third packages being supported on a first package by projections so that an end of each of the second and third packages is arranged directly above an electronic component, as set forth in amended Claim 11.

The Lo et al. reference fails to disclose or suggest mounting a third semiconductor package including a plurality of third semiconductor chips on or above a third carrier substrate, the third semiconductor package being independent from a second semiconductor package, as set forth in amended Claim 13. Lo et al. also fails to disclose or suggest projections on first and second carrier substrates arranged on a first semiconductor chip, as set forth in Claim 13.

The Lo et al. reference fails to disclose or suggest mounting a third package PK13 of electronic components 33 on or above a third carrier substrate 31, the third package being independent of a second package, as set forth in amended Claim 15. The Lo et al. reference also fails to disclose or suggest forming projections on each of second and third carrier substrates and arranging the projections on a first electronic component, as set forth in Claim 15.

The Lo et al. reference fails to disclose or suggest each and every feature of amended independent Claims 1, 11, 12, 13, and 15. Therefore, the Lo et al. reference fails to anticipate or render obvious these independent claims and those claims dependent therefrom. Applicant respectfully requests reconsideration and withdrawal of this Section 102 rejection.

REJECTION UNDER 35 U.S.C. § 103

Claims 4, and 6-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lo et al. in view of Degani et al. (U.S. Pat. No. 6,369,444). Claims 9 and 10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lo and Degani and further in view of Senba et al. (U.S. Pat. No. 5,973,392). These rejections are respectfully traversed.

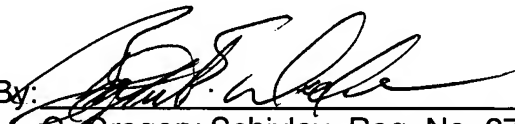
Claims 4 and 6-10 are dependent upon amended Claim 1. As set forth above, amended Claim 1 is not anticipated by or obvious in light of the prior art. Therefore, Claims 4 and 6-10 dependent therefrom are also not obvious in light of the prior art at least for the reasons set forth above with respect to amended Claim 1. Therefore, Claims 4 and 6-10 are now in a condition for allowance.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: July 27, 2005

By: 
Gregory Schivley, Reg. No. 27,382
Bryant E. Wade, Reg. No. 40,344

Harness, Dickey & Pierce, P.L.C.
P.O. Box 828
Bloomfield Hills, Michigan 48303
(248) 641-1600

GGS/BEW/BGS/les